THE LIFE OF A DIVER

PERILS CONSTANTLY MENACE HIM WHILE HE IS AT WORK.

The Sensations He Experiences When Under Water, Incased In His Hideous Armor—Four Hours a Day Are the Limit of His Endurance.

The dangers of the diver's life are little realized by the world on land until one is killed. Some fifty divers are at work almost every day in the waters of New York harbor, yet as long as they perform their tasks successfully they remain as obscure as their dim haunts. While scouring off barnacles from ship bottoms or patching holes in sunken hulls or mending pipes under the East river their work, even if visible, is too commonplace "to point a moral or adorn a tale." Even when there is a wreck and lives are lost few think of the patient, plodding diver, who gropes through the watery saloons of the steamships and brings to the surface the pallid corpses.

When the diver is initiated into the mysteries of the deep he is extremely cautious. Then he appreciates far more than after he has become accustomed to his strange surroundings the perils of his new life. As soon as he has donned his armor, whose very hideousness would seem to indicate the terrors lurking in that unnatural element into which he ventures, and has sunk beneath the surface every sense begins to act in a weirdly distorted fashion. He thinks he sees objects within reach which in reality are far remote. He claps his hands with difficulty and hears no sound, yet a knock on the side of a ship with his knuckles gives the ring of a bell. His body has an unusual lightness, so that a little leap will carry him over vast spaces. His sense of smell has been annihilated. The air which puffs into his helmet and then, leaking out through the escape valve back of one ear, bubbles up to the surface as if out of the snout of a porpoise at first had the scent of machine oil. In a few minutes it becomes utterly odorless.

There are still buried treasure ships whose exact situations are known to mariners, but which are inaccessible because of their great depth. Divers equipped with the present brass and rubber uniforms cannot go deeper than 200 feet, and even at this depth only a few can remain more than five minutes. One hundred and twenty feet is the limit for most miners of the sea, for at this depth they are under a pressure of four atmospheres.

For the reason that man can venture only a few feet down into the sea the diver of these practical modern times has abandoned his hunt for treasure and has become a skilled laborer at $5 a day. Though his wages are larger than many kinds of workmen earn, nevertheless they are less regular, and the diver who earns $150 a month is regarded lucky. He is indeed fortunate if he can obtain a steady job in the dock department, for the city employs eight divers at $5 a day throughout the year, with only four hours of labor in the twenty-four and $1.25 extra for every additional hour.

In preparing for his work the diver must serve a long and tedious apprenticeship. For the reason that he will be called on to do the work of various trades, such as those of mason, carpenter, iron worker, plumber and mariner he must master the principles of all these vocations. He generally serves three years as a member of a wrecking crew, and in addition to everything else he studies the character of the waters, their depth and currents, in which he will one day work. He learns to be a diver's tender, the man who holds the life line and air tube of the diver, and these are some of the signals with which he becomes familiar:

One pull of air hose—more air.
Two pulls of air hose—less air.
Three pulls of air hose—pull it up.
One pull of life line—haul up working rope.
Two pulls of life line—lower working rope.
Three pulls of life line—haul up diver.

As the pressure of the water increases on the diver's suit at about the rate of one pound for every two feet the apprentice must learn how to manage the air pump. He must memorize the following table and see that the gauge of the air pump tallies to it as nearly as possible:

Depth of diver in feet.	Pounds pressure sq. inch.	Depth of diver in feet.	Pounds pressure sq. inch.
20	8½	80	34¾
30	12¾	90	39
40	17¼	100	43¼
50	21½	110	47¾
60	26¼	120	52¾
70	30½		

A diver may be killed or his life shortened many years if the air is not given him at the right pressure. On the surface of the water the atmosphere presses against all parts of his body about fifteen pounds to the square inch. Yet the pressure is as much from within outward as in the opposite direction and so neutralizes itself. As soon as the diver descends into water the pressure of air against his flesh must be increased just enough to prevent the ponderous brass helmet in which his head is incased from crushing his shoulders.

A peril which constantly menaces the diver is the breaking of his air pipe. Wherever he goes he watches lest he cut it on some sharp projection. The moment that it snaps the air pressure within his suit is gone, and the dead weight of all those feet of water pounds his helmet with the force of a trip hammer. As his body is charged with air at a high pressure this air rushes outward, thus distending such elastic organs as the eyes and eardrums to bursting.

"I remember a case where a diver's hose broke," said a master diver. "He was at work on a sunken sugar ship, and he was down some sixty feet. All at once the air pump handles whizzed round like the flywheels of an engine when the belt slips off, and, with a hiss that sounded like a snake's, the hose came writhing and twisting to the surface. Before the tender could yell for help a great bubble exploded right under him, followed by a string of smaller ones.

"Well, we pulled up that life line all in one breath. We got that helmet off and pulled off his suit. We thought him dead. His eyes bulged out till they looked like fingers, and his eardrums were blown out like little balloons. Around his neck, where the heavy brass rim of the helmet struck him, there was a livid black circle which looked like burned wood. But he came out of it. He's alive, but life isn't much good to him now."

At depths less than sixty feet the ordinary diver can work hour after hour, but below that limit he must take frequent rests. Four hours constitute a day's work at all depths. Thus, at seventy feet he works three-quarters of an hour and rests fifteen minutes. At eighty feet he works forty and rests twenty minutes. Thus the ratio continues until at 110 feet few divers can work more than ten minutes.

When a diver has stayed down too long, he does not suffer while still in the water, but after coming to the surface. After a protracted immersion his organs do not react as quickly to the lighter pressure, and the swellings from air pushing out through the tissues do not subside as rapidly.

Ordinarily the experienced diver as he slowly descends does not notice any sensations that are painful. He feels a cracking of the eardrums, which he relieves by keeping his mouth open and swallowing frequently. He does not find it much harder to breathe until he gets very deep, when the air has a drowsy effect on his senses. On rising after the usual "stay down" the crackings of the ears begin again, and again they may be checked by swallowing, an act which forces air of the same density as that outside through the eustachian tubes into the chamber behind the eardrum. Unless a man has a heart that is perfectly sound and lungs that are especially strong he should never don the diver's armor. Even with these he sometimes is compelled to abandon submarine work after a year or two.

Another peril which the diver encounters is the "somersault." Because of the great weight of his helmet he is likely to turn turtle despite his lead soled boots. In Suda bay, island of Crete, a diver of the British battleship Hood lost his balance while at work on a sunken torpedo and hung for five hours heels over head under some forty feet of water. He had tangled his lines with the hawser, which he had attached to the torpedo and with which his companions above were attempting to hoist. When rescued at last by a fellow diver he was found unconscious, but alive. In another half hour, however, he would have drowned. Because the pressure of air had not been sufficient water had leaked in and collected in the helmet. When he was found the water had risen to within a quarter of an inch of his nostrils. In tropical waters sharks menace a diver with such ferocity that he is only safe when working in a great cylindrical cage.—New York Tribune.

Medicinal Vegetables.

Vegetables have direct effect upon the human system and often combine rare curative powers. Spinach affords relief in kidney troubles, and the common dandelion, used as greens, is excellent for the same thing. Asparagus purges the blood. Celery acts admirably upon the nervous system and is a cure for rheumatism and neuralgia. Tomatoes act upon the liver. Beets and turnips are excellent appetizers. Lettuce and cucumbers are cooling in their effects upon the system. Onions, garlic, leeks, olives and shallots, all of which are similar, possess medicinal virtues of a marked character, stimulating the circulatory system, and the consequent increase in the saliva and gastric juice promotes digestion. Red onions are an excellent diuretic, and the white ones are recommended to be eaten raw as a remedy for insomnia. A soup made from onions is regarded by the French as an excellent restorative in weakness of the digestive organs.

Election Bribery In England.

Some years ago an investigation of election bribery in England disclosed the following method of buying votes: An elector entered the agent's room. Agent (holding up three fingers to signify 3 sovereigns)—Well, Mr. Smith, how are you today? Mr. Smith—I am not very well today. Agent (holding up five fingers)—I am sorry you are not very well today. Mr. Smith—Oh, I am not very ill. It is all right. Then Smith looked out of the window while the agent put 5 sovereigns on the table. It was then the agent's turn to look out of the window, and when he turned round again Smith and the money had disappeared. Smith never saw the agent put down the money; the agent never saw Smith pick it up. Consequently when a parliamentary commission was appointed the agent swore he never gave Smith any money and Smith swore that no one gave him any.

Himalaya Baby's Noonday Nap.

In certain parts of the Himalaya mountains the native women have a singular way of putting their children to sleep in the middle of the day. The child is put near a stream of water, and by means of a palm leaf or a tin scoop the water is deflected so as to run over the back of the child's head. The water pouring on the child's head apparently sends it to sleep and keeps it so, while the mother proceeds with her work in the fields. No one seems to fear that baby may be drowned.—Chicago Journal.

MISTAKES WE CAN'T HELP MAKING.

How many buttons have you got on your waistcoat? This is a simple question, and if you can answer it without counting it shows that you possess powers of perception above the average. It is an absolute fact that nine men out of ten cannot tell offhand how many buttons there are on the garment which they put on every morning and take off every evening.

This is just one of those things which exemplifies how most people fail to cultivate their powers of observation. Here is another.

A watch is a fairly familiar object, yet if you were asked whether the numbers on the face correspond with the Roman numerals what would you say? Ninety-nine persons out of a hundred would at once answer "yes." Yes the ninety-nine would be wrong. The symbol for four is not the customary IV., but IIII.

One could multiply such instances to almost any extent. It is safe to bet almost any man except an architect that he does not know how many stairs there are in any particular flight in his own house, even though he has climbed them thousands of times.

It is not that we have not the faculty of remembering such facts. That we do possess this is proved by the comparatively astonishing feats of memory each of us performs daily in his or her especial line of occupation.

The cook will carry in her head hundreds of different recipes and a shipping clerk hundreds of addresses. The mischief is that so few of us train our powers of observation outside our own particular line.

Perhaps nowhere is this better exemplified than in courts of law.

In a recent murder case a man suspected of the crime was seen on the road near the house by three different persons. One said the individual was rather short and stout, had a beard and mustache, and wore a dark suit of clothes and a bowler hat. A second witness, a woman, declared the man was above medium height, had a black beard and whiskers, but no mustache and wore a cap. Of his clothes she was not sure, but thought they were light in color.

The third witness was positive the man was short, thin, elderly, had a gray beard and mustache, and wore a Luckily for the cause of law and justice, it turned out that the suspect was innocent, for the real criminal was discovered.

There is no point in which average human judgment errs more completely than in the estimate of distance, length, depth, height and speed. An amusing proof of this was recently offered by the mayor of a certain South country town.

Edmund Davis, a well-known motorist, convicted of traveling at excessive speed in the borough in question, made an offer to give £100 to the poor of the town if the mayor could estimate his speed within two miles an hour on three successive trials. But the mayor, no doubt, mistrusting his powers, did not even reply to Mr. Davis's challenge.

An interesting experiment was tried in Berlin in December last, with a view to throwing a light on this question of the conflict of evidence. Its originator was Professor Von Liszt.

He got up a quarrel between two of the pupils. Only the two pupils and the professor knew the quarrel was to take place. To the twenty-three other persons in the room the whole affair came as a surprise.

The quarrel, it was arranged, was to take place in two parts—first, the exchange of abuse and angry epithets; secondly, the use of a pistol and walking stick. The pistol was, of course, loaded only with blank cartridge.

At the time appointed the quarrel took place amid tremendous excitement. The professor succeeded in putting a stop to it, and getting hold of the smoking pistol.

At the end of the hour he told his class the quarrel had been a sham one, but asked the young men to consider it as real. A week later he lectured on the difficulties of evidence, and afterward took in private the testimony of those who had witnessed the quarrel.

Out of these twenty-three well educated young men the evidence of no two was exactly alike. No fewer than eight different names were given as that of the originator of the fight.

The actual firing of the pistol was accurately described by nearly all, sions of the exact period of the quarrel at which it was fired. The professor's own attempt to quell the disturbance was told in eight different versions, and the result confirmed the futility of corroborative evidence in a court of law.

The sense of sight is deceived in a hundred ways which are rarely considered. For instance, stand and watch the revolutions of the cups of anemometer—the instrument used for measuring the velocity of the wind.

You may gaze for several minutes as carefully as you please, yet at the end of that time still be puzzled as to the real direction in which they are turning. The more uncertain the wind and the greater, consequently, the variation of the speed, the more is the difficulty of the task increased.

Again, standing below a high building and looking up, many will aver that the wall is not exactly perpendicular, but inclines overhead in a threatening manner. The longer the wall extends the stronger becomes the illusion.

Another simple illustration of the difficulty experienced by most persons in making exact observation is the failure to notice mistakes in type. In a recent experiment copies of uncorrected proofs were distributed among pupils in the highest grade of a primary school. The average age of the class was 14 years.

The average number of errors found was only twelve. Some of the children only found three. The actual number as marked by a professional proofreader was forty-one. A particularly interesting point about this experiment was that the older children as a rule found fewer mistakes than the younger.—Pearson's Weekly.

Hospitality In Southern Hills.

In the hill country of Northern Virginia a tourist, who was making a long trip on horseback, halted one noon before a log house, which he at first took to be a stable. An old man was seated on a log near the door. An emaciated mule stood with his head half way inside the window. No sign of smoke issued from the tumble-down chimney.

The tourist made inquiry concerning the mountain roads, and was on the point of asking if he could get a meal for himself and his horse, when the owner of the shanty said: "Stranger, I'd like mighty well to invite ye to dinner, but I reckon ye wouldn't relish cold hoe-cake and greens."

The rider was about to say anything would be acceptable, when the old man continued:

"I'd like to feed that horse o' yourn, but my old mule there's got to browse mighty fine to keep on her legs this fall."

The stranger explained that he would be glad to pay for anything that could be obtained.

"'Taint that," returned the other, reproachfully. "Ye don't think I'd take anything from a guest? But—well, fact is, we ain't been gettin' on as well as we might lately. The old woman's down with rheumatiz, and Sal, she's over the Ridge fer a spell, and things ain't just ready for company, as ye might say."

It was easy to see that his pride was putting the best possible face upon a pinching poverty. The rider gathered up his reigns, and, making light of his needs, tendered a cigar.

That touched the old man. He turned the gift over and over, looked up and down the road, from the rider to the house, and then back to the rider again. Then he seized the man's bootleg and exclaimed:

"Stranger, I'm poor and 'way down, I'll own up! I can't feed ye, nor warm ye, nor gin ye so much as a whiff of smoke, but if ye don't git down offen that horse and come over to the spring and have some water with me, I'll never forgive ye on the airth!"—Youth's Companion.

FARM LACONICS.

Some Timely Hints For General Work on the Farm.

The farmers feed them all.

Get ready for root crops.

All kinds of live stock like mangelwurzels and other root crops.

Get the hills ready for the late cabbage plants. If commercial fertilizer is used in the hills mix it well through the soil a short time before the plants are set.

It is a good plan to plant the seed direct in hills for the late cabbages. Put three seeds in a hill and finally thin out to one plant. Cabbage requires frequent cultivation, so keep the soil well stirred about them.

See that all the haying implements and tools are in perfect condition so as to take advantage of the good weather when hay is ready to be cut. Delays are truly dangerous in haymaking time.

There is much complaint of corn notcoming up well this season. Go over the fields and replant the missing hills. Beter use some early maturing corn. Some farmers replant with sweet corn and use the ears for the table or sell while green. The stalk of the sweet corn makes excellent fodder.

Now get ready for potato planting and for field beans.

Keep the scythe moving on the weeds around the house and outbuildings. Don't give them a chance [illegible] form seeds or become conspicuou[illegible] jects of sloppy farming. Ne[illegible] surroundings add both co[illegible] happiness, and it is al[illegible] to have neat and t[illegible]

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